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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference MRE 24 PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/FI 2003/000880	International filing date (day/month/year) 18.11.2003	Priority date (day/month/year) 18.11.2002
International Patent Classification (IPC) or national classification and IPC D21B 1/12		
Applicant M-Real OYJ et al		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
- a. ☐ (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:
- ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
- ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
- b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 02.06.2004	Date of completion of this report 07.02.2005
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Marianne Bratsberg/Els Telephone No. +46 8 782 25 00

Form PCT/IPEA/409 (cover sheet) (January 2004)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/FI 2003/000880

Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

- ☒ the international application as originally filed/furnished
- ☐ the description:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the drawings:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-8, 10-11</u>	YES
	Claims	<u>9, 12-13</u>	NO
Inventive step (IS)	Claims	<u>1-8</u>	YES
	Claims	<u>9-13</u>	NO
Industrial applicability (IA)	Claims	<u>1-13</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention relates to a method and an apparatus for producing fibres from wood chips using at least two refining stages. The object of the invention is to provide a method and an apparatus for producing thermomechanical fibres using less energy than previous methods and apparatuses.

Of the documents cited in the International Search Report the following will be discussed:

D1. WO 9618769 A1

D2. SE 7810876 B

D3. CA 1125077 A

D4. US 6364998 B1

Document D1 has been reconsidered and is now characterised as an A-document. Thus, the method in claims 1-8 is considered to be novel and to involve an inventive step. However, the apparatus in claims 9-13 is not considered to fulfil the requirements of novelty and inventive step.

Documents D3 and D4 disclose an apparatus for producing pulp from wood chips, comprising two refining stages, means for feeding wood chips to the first refining stage and means for transferring the mass from the first refining stage to the second refining stage.

.../...

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

It is not explicitly stated in any of these documents that the cross section of the flow path between the first and the second refining stage is constant or decreasing, but it is stated in D3 that the groundwood from the first refining stage is transported in a pipe (22) to the second refining stage, which pipe can be expected to have a constant or decreasing cross section, see fig 1. In D4, the partially refined pulp travels through a blow line (42), which also should have a constant or decreasing cross section, see fig. 1.

Thus, the apparatus in claim 9 lacks novelty in view of either of documents D3 and D4.

The features in claims 12-13 are known from D4 and thus lack novelty.

The apparatus in claims 10-11 differ from the apparatus in D3 or D4 in that a cyclone and a return steam line are arranged after the second refiner for separating steam from the mass flow and returning the separated steam to the first refiner.

D2 discloses an apparatus for producing pulp from chips comprising two refiners and a cyclone for separating steam arranged after the second refiner. The steam is returned to the steam treatment of the chips.

It is considered that the teachings in D2 would lead a person skilled in the art to provide the apparatus in D3 or D4 with a cyclone and a return steam line after the second refiner. Thus, the apparatus in claims 10-11 is considered to lack an inventive step.